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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/639,678	08/11/2000	Daryoosh Vakhshoori	CORE-57	1592

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STEUBING AND MCGUINESS & MANARAS LLP  
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EXAMINER

NGUYEN, JOSEPH H

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 09/639,678	<b>Applicant(s)</b> VAKHSHOORI ET AL.	
	<b>Examiner</b> Joseph Nguyen	<b>Art Unit</b> 2815	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All   b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Kullander-Sjoberg et al.

Regarding claim 1, Kullander-Sjoberg et al discloses a method for modulating the output an optically pumped, tunable VCSEL 9 wherein said method comprises optically pumped, tunable VCSEL having a top face 11 in communication with an active region 10 of the VCSEL, and a bottom face 8 wherein said method comprises the steps of optically pumping the VCSEL 9 by directing an output from a pump laser 1 on the bottom face of the VCSEL so as to cause the VCSEL to generate a first output having an output power greater than zero, and modulating the output light power of the pump

laser so as to modulate the carrier population in the VCSEL's active region and thereby to modulate the output of the VCSEL to a second output having an output power greater than zero (col. 2, lines 33-38).

Regarding claim 2, Kullander-Sjoberg et al discloses a method for modulating the output of an optically pumped, tunable VCSEL 9 having a top face 11 in communication with an active region 10 of the VCSEL, and a bottom face 8, wherein said method comprises the steps of optically pumping the VCSEL9 by directing an output from a pump laser 1 at the bottom face 8 of the VCSEL, so as to cause the VCSEL to generate an output and applying a voltage across the VCSEL's active region 10 so as to alter the optical power circulating in the VCSEL's cavity to control the output power of the VCSEL (col. 2, lines 40-50).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kullander-Sjoberg et al in view of Yuen et al.

Regarding claim 3, Kullander-Sjoberg et al discloses a tunable vertical cavity surface emitting laser (VCSEL) comprising a VCSEL 9 comprising a substrate 7; a bottom mirror 8 mounted on top of the substrate; an active region 10 mounted on top of

the bottom mirror; a support 11 disposed on the active region, the support including a top mirror, and a pump laser 1 directed at a bottom face of the substrate, the pump laser for providing light power at the bottom face of the substrate to cause the active region to provide an output for the VCSEL. Kullander-Sjoberg et al does not disclose an air cavity formed between the bottom mirror and the top mirror. However, Yuen et al discloses on figure 1 an air cavity 29 formed between the bottom mirror 10 and the top mirror 32. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify an air cavity formed between the bottom mirror and the top mirror by having an air cavity formed between the bottom mirror and the top mirror for the purpose of providing strong index guiding to the optical mode of VCSEL as taught by Yuen et al. (col. 5, lines 6-7).

Regarding claim 4, Kullander-Sjoberg et al. and Yuen et al together disclose all the structure set forth in the claimed invention.

### ***Response to Arguments***

Applicant's arguments filed on 11/03/2003 have been fully considered but they are not persuasive.

With respect to claims 1 and 2, applicant argues that Kullander-Sjoberg et al. does not disclose the limitation "optically pumping the VCSEL by directing an output from a pump laser onto the bottom face of the VCSEL as to cause the VCSEL to generate a first output having an output power greater than zero" as recited in now amended claim 1. However, Kullander-Sjoberg et al. clearly teaches about optically

pumping the VCSEL 9 by directing an output from a pump laser 1 onto the bottom face 8 of the VCSEL 9 as to cause the VCSEL to generate a first output having an output power greater than zero (col. 2, lines 39-53).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (703) 308-1269. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 308-7382 for regular communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JN  
November 24, 2003

  
**GEORGE ECKERT**  
**PRIMARY EXAMINER**